wherein the charge transfer material
a) comprises charge transfer components in the form of donors and/or acceptors,
b) forms a self-assembling layer of one or more atomic and/or molecular layers,
c) has a direct or indirect bond to the surface of the substrate, and
d) forms a charge transfer complex with an organic or inorganic semiconductor, wherein the charge transfer material forms a donor or acceptor material in the charge transfer complex depending upon respectively whether the semiconductor itself is an acceptor or donor material.

Features a)-d) of claim 1 are four different features of the charge transfer material. Feature a) of the charge transfer material is that it "comprises charge transfer components in the form of donors and/or acceptors." Feature b) of the charge transfer material is that it "forms a self-assembling layer of one or more atomic and/or molecular layers", etc. Thus, claim 1 properly recites "a)" and withdrawal of the objection is respectfully requested.

Rejections under 35 U.S.C. §102(b)

The Examiner rejects claims 1-8, 10-20, and 22-24 under 102(b) as being anticipated by Nakayama et al. (EP 0450 862 A2). Nakayama et al. is asserted to teach an organic thin film element having all of the features of the present claimed invention, with the exception of the features of claims 9 and 21. Applicants traverse this rejection and withdrawal thereof is respectfully requested.

The present invention, as encompassed by claim 1 is drawn to a device for electrical contacting or for the isolation of

organic or inorganic semiconductors in electronic or optoelectric devices comprising

a substrate....and

a patterned or unpatterned charge transfer material on or at a surface of the substrate wherein the charge transfer material

a) comprises charge transfer components in the form of donors and/or acceptors,

b) forms a self-assembling layer of one or more atomic and/or molecular layers,

c) has a direct or indirect bond to the surface of the substrate, and

d) forms a charge transfer complex with an organic or inorganic semiconductor, wherein the charge transfer material forms a donor or acceptor material in the charge transfer complex depending upon respectively whether the semiconductor itself is an acceptor or donor material.

Thus, the present invention requires that the charge transfer material have the following properties:

a) comprises charge transfer components in the form of donors and/or acceptors,

b) forms a self-assembling layer of one or more atomic and/or molecular layers,

c) has a direct or indirect bond to the surface of the substrate, and

d) forms a charge transfer complex with an organic or inorganic semiconductor, wherein the charge transfer material forms a donor or acceptor material in the charge transfer complex depending upon respectively whether the semiconductor itself is an acceptor or donor material.

"To anticipate a claim, a prior art reference must disclose every limitation of the claimed invention, either explicitly or inherently." In re Schreiber, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir. 1997). Thus, to anticipate the present invention Nakayama et al. must disclose every recited limitation of the present invention and must disclose a charge transfer material that possesses the four properties of the present invention recited above.

The differences between the present invention and Nakayama et al. may be easily visualized through a comparison of Figure 3 of Nakayama et al. and Figure 3 of the invention, which depicts, in part, the recited features of claim 1.

With Figure 3 of the specification, the charge transfer material 2 is provided on a substrate 1a, which can be a conductor or an insulator, and is bonded to the surface of the substrate either directly or indirectly, (in Figure 3 the bonding is by means of a functional group denoted "s"). In Fig. 3 of the specification, the active material in the form of an inorganic or organic semiconductor (see "d)" of claim 1) is not shown, while it is present in Fig. 4 wherein the reference numeral 3 denotes the charge transfer material together with a possible bonding

agent. In Fig. 4 of the specification, reference numeral 6 denotes the active material.

The active material 6 as shown in Fig. 4 may be regarded as being the equivalent of the organic thin film layer 12 in Fig. 3 of Nakayama et al. The thin film layer 12 of Nakayama et al. is a charge transfer complex. However, the charge transfer material of the present invention is entirely lacking from the device disclosed Nakayama.

One skilled in the art would understand that the active semiconductor material of the present invention (claim 1 d)) can be an acceptor and donor material and that the charge transfer properties of the device of the present application would depend on whether the charge transfer material itself is a donor or acceptor material.

The charge transfer material of the present invention enhances or blocks charge injection depending on the corresponding properties of the active material, i.e. whether the active material is a charge acceptor or charge donor. The charge transfer material forms a charge transfer complex with the active material. See claim 1d).

If the device of Nakayama et al. is compared to the present invention, it would be the layer 5 of Nakayama et al. that would provide the charge injection properties while the layer 12 as shown in fig. 3 of Nakayama et al. would correspond to the active (semiconductor) material 6 of the present invention. However layer 5 of Nakayama et al. is formed from different material than

the charge transfer material of the present invention and would not function as such. The polycyclic aromatic layer 5 of Nakayama et al. is not directed to charge transfer or injection, but rather is provided in order to modify the substrate surface and act as a crystal orientation layer for the thin-film material of the layer 12.

In addition, the charge transfer material according to the present invention is required to form a self-assembling layer. This feature cannot be found in Nakayama et al. As such, each feature of the present invention is not disclosed in Nakayama et al. and the present invention is therefore not anticipated by the reference.

The present invention also possesses advantageous properties that are neither disclosed nor suggested by Nakayama et al. For example, the effect of the charge transfer material according to the present invention is either an enhancement of the charge injection properties of the contact material or it can be used to block a charge injection, e.g. either for controlling a channel length, as depicted in Fig. 6, or to provide an insulating function in the semiconductor device and prevent undesired leakage currents, as depicted in Fig. 7. It is not possible to achieve these effects with the device of Nakayama et al.

Thus, Nakayama et al. fails to disclose the recited features of the present invention and withdrawal of the rejection is respectfully requested.

As the above-indicated remarks address and overcome the

objections and rejections of the Examiner, withdrawal of the objections and rejections and allowance of the claims is respectfully requested.

Should the Examiner have any questions, regarding the present application, he is requested to please contact, MaryAnne Armstrong, PhD (Reg. No. 40,069) in the Washington DC area at (703) 205-8000.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), applicant(s) hereby petition(s) for an extension of time for two (2) month(s) for filing a reply to the Office Action in connection with the above-identified application. The required fee is attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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